

abruptly clavate. In the absence of males, the reddish elytra and the habitat will perhaps make *rufipennis* identifiable in most cases. In *rufipennis* the lower edge of the fore femur in profile is broadly rounded at the summit of the femoral swelling, whereas in *pacificus* the swelling is more abruptly formed, its summit in profile more narrowly rounded to almost angulate.

TWO NEW LEAFHOPPERS FROM TROPICAL AMERICA

BY P. W. OMAN*

The two Cicadellidæ here described are of unusual interest in that they represent groups not heretofore known to occur in America. Both appear to have their nearest allies in the Oriental Region, but neither can be associated satisfactorily with any described species. Thanks are due to Mr. C. H. Ballou of San José, Costa Rica, and Dr. W. A. Hoffman of San Juan, Puerto Rico, for sending the specimens upon which the descriptions are based.

Neonirvana Oman, new genus

Medium sized leafhoppers, approximately 5-7 mm. in length, somewhat flattened dorso-ventrally, related to *Nirvana* Kirkaldy and *Ophiuchus* Distant¹ in general form and structure of the head, but differing from both in the absence of a median carina on the front and in the presence of a closed anteapical cell in the fore wing. Resembling *Nirvana* in the structure of the face, but with the head broader, especially anteriorly. Much like *Ophiuchus* in the structure of the crown but with the face less flattened.

Crown nearly flat, anterior margin slightly elevated, entire anterior and lateral margins of crown separated from front by a distinct carina which extends to eyes laterally. Median length of crown slightly greater than greatest width. Ocelli situated near lateral margins of crown, some distance in front of inner margins of eyes (Fig. 1, A). Face broad and slightly convex, antennal pits and facial sclerites typical of the subfamily. Lateral pronotal carinæ distinct, posterior margin of pronotum shallowly and

*Bureau of Entomology and Plant Quarantine
United States Department of Agriculture, Washington, D. C.

¹The writer has not examined the genotype of either *Nirvana* or *Ophiuchus*, but accepts Baker's characterization of the two genera (see Philippine Jour. Sci., vol. 23, p. 345-405, 1923).

broadly excavated. Fore wing comparatively broad but extending well beyond tip of abdomen; appendix absent or extremely small; venation obscure, but with a row of shallow pits along each side of the veins except apically, these pits usually set with very fine setæ. Claval veins apparently united distally; corium with outer antepical cell present but short and rhomboidal in shape; apical vein separating second and third apical cells forked just before apex of wing to form an additional small V-shaped apical cell, at the base of which the wing membrane thickens to form a small, round, shining, black spot. Hind wing with venation typical, having four apical cells. Slight sexual dimorphism apparent in length of head.

Type of the genus, *Neonirvana hyalina*, new species.

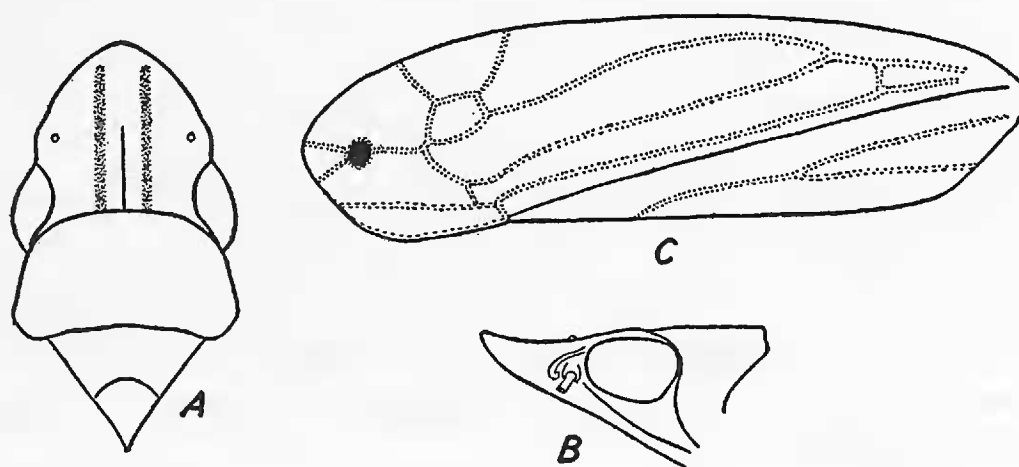


Figure 1. *Neonirvana hyalina*, n. sp. A, dorsal view of head and thorax; B, lateral view of head; C, left fore wing.

Neonirvana hyalina Oman, new species

(Fig. 1, A,B,C)

General color pale green to pale yellow with whitish markings on pronotum and scutellum. Fore wings greenish to yellowish subhyaline. Length of male 5.5 mm., of female 6.75 mm.

Crown without definite markings except for a pair of narrow, longitudinal, yellowish-green to orange yellow vittæ each side of median line and for similarly colored but indefinite areas along lateral margins. Longitudinal vittæ nearer to median line than to eyes and extending from base nearly to apex of crown. Face and entire venter greenish-white to yellowish-white, sometimes tinged with yellow. Pronotum with white lateral margins, usually a pair of faint whitish spots anteriorly near median line, and faint traces of longitudinal vittæ continuous with those on crown. Scutellum with a pair of median white areas anterior to transverse suture. Inner apical cell of fore wing hyaline, outer apical margin of fore wing bordered with smoky brown.

Male valve minute; male plates unusually long, slender basally and with ventral margins set with stout setæ, distally much broadened and almost membranous, with the broadened portion normally held nearly vertically, apices broadly rounded and margins of submembranous portions set with very fine setæ, these long and filamentous below, shorter above. Styles slender and simple, apices curved laterally and terminating in sharp points which are faintly embrowned. Last ventral segment of female with a very faint median carina, the posterior margin triangularly produced, the blunt apex with a shallow median notch. Ovipositor sheath slightly exceeding pygofer in length, pygofer sparsely set with stout setæ apically and along ovipositor sheath.

Holotype male, allotype female, and 3 female paratypes from San Pedro de Montes de Oca, Costa Rica, January 31, 1936, C. H. Ballou (C. R. 355). Also 1 female paratype from Orosi, Costa Rica, September 13, 1935, C. H. Ballou. Types in collection of United States National Museum, Cat. No. 51617.

The foregoing genus conforms in all respects with the group characters given by Baker, 1923, for *Nirvana* and allies, which he treats as a family with rank equal to Bythoscopidæ, Koebeliidæ, etc. While it is debatable whether these groups are of family or of subfamily rank, the writer considers the comparative evaluation satisfactory.

Krisna insularis Oman, new species

Closely related to *K. strigicollis* Spinola, to which it runs in Baker's key to the genus² and with which it agrees in general size and coloration. Differing from *strigicollis* in being smaller than the average size for that species and in having a slightly wider head and more slender form. Length of male 9.75 mm.

Head nearly as wide as pronotum, anterior margin of crown broadly rounded, median length of crown about one-half the width between eyes. Face as in *strigicollis*, but margin between crown and face thinner than in that species and only the upper of the transverse carinæ distinct for entire width of crown. Ocelli large. Antennæ short, as in *strigicollis*. Transverse rugæ on pronotum less distinct than in *strigicollis*, and pronotum only slightly wider posteriorly than next the eyes. Fore wing more slender than that of *strigicollis*, more tapered distally, and with appendix much narrower and less membranous. Inner apical cell of fore wing very narrow and elongate as in *strigicollis*, remainder of apical portion of fore wing coarsely reticulately veined. Legs, particularly the

² Philippine Jour. Sci., vol. 15, p. 213, 1919.

hind tarsi, more slender than in even smaller specimens of *strigicollis*, and hind tarsi without stout spines except in distal combs.

Color pale virescent to pale stramineous, probably vividly virescent in life. Eyes and small areas around ocelli red or brown, anterior tibiae and tips of all tarsi tinged with reddish.

Male valve very large and rounded posteriorly, almost completely covering the small, finger-like plates which are set with fine, filamentous setae. Styles extending slightly beyond plates, terminating in curved, upturned points, and each with a blunt, tooth-like projection on the ventral side a short distance before apex.

Holotype male from Luquillo National Forest, Puerto Rico, Sept. 9, 1935, W. A. Hoffman. One male paratype labeled El Yunque, P. R., 2800 ft., Feb. 25-27, 1900, C. W. Richmond. Types in collection of United States National Museum, Cat. No. 51618.

The writer has at hand for comparison types or authentically determined material of most of the species of the genus *Krisna*, but the species described above appears to be quite distinct from any previously named, although it is possible that this represents one of the variations now included as synonyms of *strigicollis*. In addition to the specific characters indicated above, *insularis* possesses all the higher group characters listed for *Krisna* by Baker, 1919, in his review of the genus, to which workers are referred for generic characters, synonymy, and distribution.

HIBERNATION IN THE CERAMBYCIDÆ

The statement frequently appears in the literature pertaining to the habits and biology of the Cerambycidæ that "no species are known to hibernate as adults except in the pupal cell." In Southern California, a number of species including *Ipochus fasciatus* very frequently pass the winter in the adult stage. In the foothills of Los Angeles County this latter species may be found all during the winter months. In cold spells the beetles occur under loose bark or secreted in the dried and curled up leaves of the native black walnut, *Juglans californica*, and other host plants. On warm days they come forth and feed upon the bark or crawl about over the tree. Likewise Mr. K. D. Sloop has reported taking *Saperda horni* Joutel and *Synaphæta guexi* LeConte rather abundantly in the winter months on *Salix* in Orange County.—E. Gorton Linsley.